

# Chapter 1

## System Overview

### 1-1 Introduction

A-760 Series notebook computer is a new generation notebook computer. It is a high-end rugged notebook computer which is an industrial notebook with some rugged features such as vibration, shock, drop and drip-proof. It is designed for using in vehicle or in the harsh environment.

The A-760 Series notebook computer implements the new technologies in the industrial market. Large display panel, high capacity hard disk drive, PCI bus and CD-ROM, etc. An Intel Pentium CPU with MMX is the heart of this notebook computer. This chapter introduces and explains the A-760 Series notebook and its computer parts.

### 1-2 System Description

The A-760 Series computer is a compact fully portable notebook computer. It operates as a stand alone system for most applications.

It offers superior performance under harsh environmental and operating conditions. It is fully compatible with the IBM PC/AT standard.

### 1-3 System Configuration

This section presents and explains possible notebook hardware configurations. Refer to the nameplate on the notebook bottom for that system's configuration.

#### 1-3.1 Standard Configuration

Table 1-1 lists the major common features of the standard A-760 systems.

The specifications in this table may be different from yours due to the optional items. Please refer to the detailed specifications including the standard and optional configurations on page d.

**Table 1-1 Standard A-760 Notebook Computer**

Feature	Description
CPU	Intel Pentium II/III 333, 400 MHz or more
Storage device	Removable 2.5-inch 6.4 GB hard disk drive ( or more ) Removable 3.5-inch 1.44 MB Floppy disk drive
Display	1. 12.1-inch color LCD, 64K color TFT, super VGA 2. 13.3-inch color LCD, SVGA TFT/DSTN 800x600 resolution, integrated power conserve mode
Power source	Rechargeable removable Ni-MH battery ( or other type )
Keyboard	87key shower proof rubber keyboard, Embedded two button track pad
Expansion	Two PCMCIA sockets (type II or one type III compatible)
I/O Devices	One Parallel port, D-type 25-pin One VGA External port, D-type 15 pin Two Serial port , D-type 9 pin (COM1 & COM2) One PS/2 Keyboard and One PS/2 mouse One IrDA Port

## 1-3.2 Options and Accessories

- External FDD
- EL-Backlight Keyboard  
The EL-Backlight keyboard function keys is Fn+F8.
- DVD
- LS120

### 1-3.2.1 Carrying Bag

The carrying bag makes carrying the notebook and its peripherals easier. It has compartments for up to four diskettes, this manual, the power supply, and all notebook cables.

## 1-3.3 System Identification

The nameplate listing system information is at the bottom of the notebook. It contains:

- Factory configuration
- Model number
- Serial number

## 1-4 Unpacking

Use this checklist to make sure all items included with the notebook are present in good condition.

- Notebook computer
- Rechargeable battery pack
- AC adapter
- Power cord
- Operation Manual
- PCMCIA diskette
- TRACKPAD diskette
- VGA Driver diskette

If any items are missing or damaged, please contact the supplier.

## 1-5 Notebook Features

Figures from 1-1 through 1-11 identify the major notebook parts, indicators, and controls.



Figure 1-1 A-760 Notebook, Front View

### 1-5.1 Cover

The notebook cover (Item 1, Figure 1-1) houses the display unit and its control devices.

### 1-5.2 Display

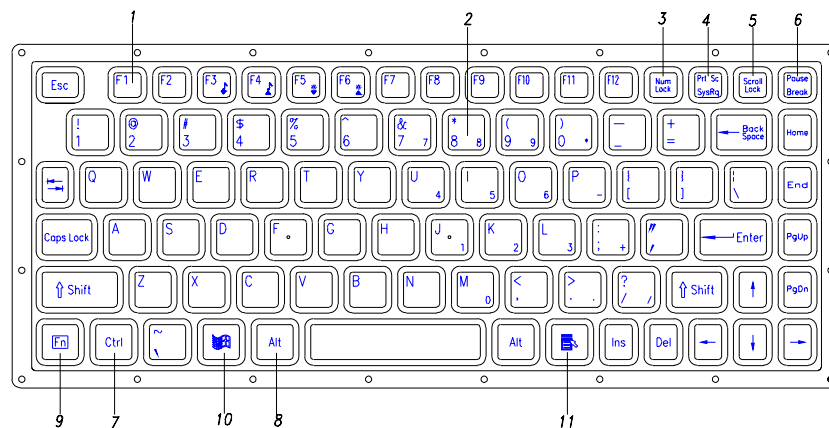
The display have three types, one is 12.1" TFT 16 bit color LCD display (Item 2, Figure 1-1) is selected in A320-Series notebook computer. The resolution of this LCD display is 800 X 600 pixels (SVGA standard). But the connection mechanism from LCD display to motherboard is designed flexibly for different venders of LCD displays and different types. The other is 13.3" TFT 24 bit color LCD display , the resolution is 1024 X 768.

### 1-5.3 Power Switch

The power switch (Item 5, Figure 1-1) turns the notebook power on and off.

### 1-5.4 Keyboard

The keyboard ( Item 3, Figure 1-1), is the primary tool for typing data and commands into the notebook.



**Figure 1-2 Rubber Keyboard**

\* About others language keyboard refer to the Appendix A.

#### 1-5.4.1 Function Keys

The function keys give special commands defined by software. The notebook BIOS also uses function keys to set some configuration parameters.

The rubber keyboard has twelve function keys numbered from F1 through F12 (Item 1, Figure 1-2) and Fn (Item 9, Figure 1-2).

#### 1-5.4.2 Embedded Numeric Keypad

(Item 2, Figure 1-2) These keys act like calculator keys when the NUM LOCK light is on. When the numeric keypad is active, the notebook disables the alphabet keys doubling as numeric keypad keys.

#### 1-5.4.3 Num Lock

The Num Lock key (Item 3, Figure 1-2) activates and deactivates the embedded numeric keypad. When the numeric keypad is active, the NUM LOCK indicator

comes on and the alphabetic abilities of the embedded numeric keyboard are disabled.

**1-5.4.4 Prt Sc/Sys Rq**

The Prt Sc/Sys Rq key (Item 4, Figure 1-2) sends a print message to an attached printer to create a hard copy of data shown on the screen or makes other system requests depending on the running software.

**1-5.4.5 Scroll Lock**

The scroll lock key (Item 5, Figure 1-2) works with some software to freeze the display.

**1-5.4.6 Pause/Break**

The Pause/Break key (Item 6, Figure 1-2) temporarily or permanently stops a program .

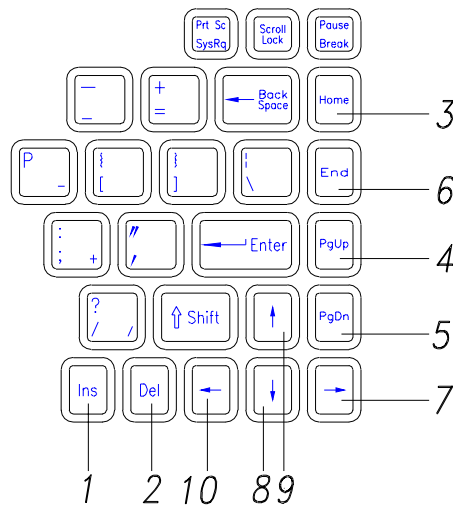
**1-5.4.7 Ctrl and Alt Keys**

(Item 7, Item 8, Figure 1-2) Some software programs use these keys in conjunction with other typewriter keys to perform special functions. See the associated software manual for details.

**1-5.4.8 Cursor Control Keys**

( Figure 1-3) Ten keys around the keyboard right edge work with many programs to enhance editing and cursor placement. See the software manuals for their proper operation. The cursor control keys are:

- Insert (Item 1, Figure 1-3)
- Delete (Item 2, Figure 1-3)
- Home (Item 3, Figure 1-3 )
- PgUp (Item 4, Figure 1-3 )
- PgDn (Item 5, Figure 1-3)
- End (Item 6, Figure 1-3 )
- → (Item 7, Figure 1-3 )
- ↓ (Item 8, Figure 1-3 )
- ↑ (Item 9, Figure 1-3)
- ← (Item 10, Figure 1-3)



**Figure 1-3 Cursor Control Keys**

### 1-5.4.9 Windows 95 Keys

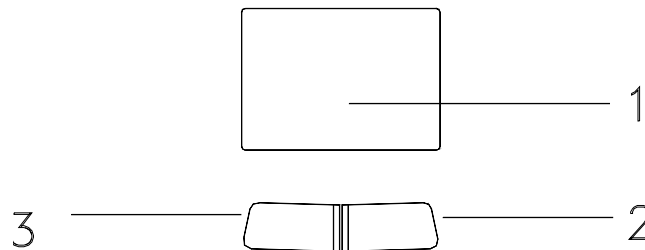
On the A-760 Series keyboard, you can find one Windows Logo key ( , Item 10, Figure 1-2) and one Application key (Item 11, Figure 1-2). The two keys are used with other keys to perform software specific functions.

### 1-5.5 Pointing Device

Track pad is used as the pointing device of the A-760 Series notebook computer. Using finger to control the movement of cursor. The advantages of track pad are easily to clean and control the direction. The pointing device (Item 4, Figure 1-1) moves the cursor about the screen to help work with data.

The track pad consists of three major components:

- Track pad ( Item 1, Figure 1-4 )
- Right input button ( Item 2, Figure 1-4 )
- Left input button ( Item 3, Figure 1-4 )



**Figure 1-4 Track Pad Pointing Device**

### 1-5.6 Volume Control

The volume control is adjusted from the combination of function keys Fn+F3 ( ↑ ) and Fn +F4 ( ↓ )

### 1-5.7 Brightness Control

The brightness control is adjusted from the combination of function keys Fn+F5 (Dimmer) and Fn+F6 (Brighter). Please press and hold Fn key, then repeat Fn key or F6 key to adjust the brightness.

### 1-5.8 Keyboard Backlight (Option for Sound Card)

The Backlight of the Keyboard is toggle from combination of function keys Fn+F8.

### 1-5.9 CRT/LCD/Simulscan Toggle

The CRT/LCD/Simulscan toggle is changed from the combination of function keys Fn+F9.

### 1-5.10 Panel On/Off

The Panel on/off is toggle from the combination of function keys Fn+F10.

### 1-5.11 Standby Mode

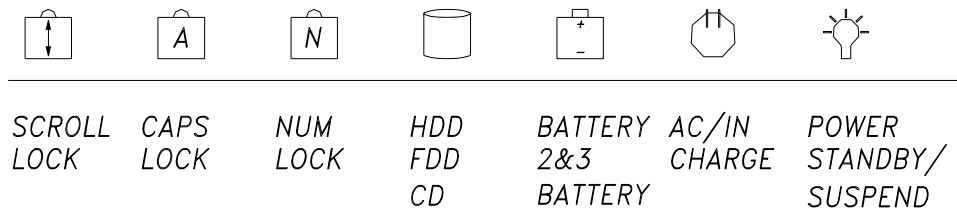
The system enter standby mode press the function keys Fn+F11.

### 1-5.12 Suspend Mode

The system enter suspend mode press the function keys Fn+F12.

### 1-5.13 Status Row

The status row (Figure 1-5) shows the current operating condition of several key notebook components. Figure 1-5 shows a close-up view.



**Figure 1-5 A-760 Status Row**

- A. When the power is on, then Power LED (Green) is on.

B. When the system enters Standby or Suspend mode, then the Standby/Suspend LED (Orange) is on.
- A. When the AC power adaptor is connected, then the AC IN LED (Green) is on.

B. When charging is in progress, then the CHARGE LED (Orange) is on.
- A. When any battery pack is present, then the BATTERY LED (Green) is on.

B. When the optional battery pack ( Bay 1 or Bay 2) enters battery low status, then the BATTERY LOW LED (Orange) is on. When if only the primary battery and battery low status then speaker will beep.
- A. When the HDD, FDD or CD-ROM drive is active, then the HDD/FDD/CD LED (Orange) is on.
- The “Num Lock” key activates and deactivates the embedded numeric keypad. When the numeric keypad is active, the “Num Lock” indicator come on and the alphabetic of the embedded numeric keypad are disabled.
- Press “Caps Lock” key will Charge the state of “Caps Lock” indicator between on and off, if the Caps Lock indicator goes on, represents the all English alphabet keys work in Upper Case state, otherwise the keys work in Lower Case state.
- The “Scroll Lock” key works with some software to freeze the display. Then the cursor can move about the screen without the top bottom or any lines in between moving.

### 1-5.14 Battery Pack

Battery Pack is an assembly of the batteries, a battery pack connector board in an enclosed plastic case.

The battery is Ni-MH type. The capacity of each is 3800mAh or more. 1.2V, 14 cells are used in one pack. The output voltage of battery pack is 16.8VDC, so the battery pack provides 63.16 watts or more to notebook computer.

Battery pack connector board provides interface between battery cells and DC/DC board. When the inside temperature of battery pack exceeds 55°C, the DC/DC converter board detects it via thermal sensor and shut down the charging current.

### 1-5.15 Low Battery Indication

When all the batteries voltages are under the low battery status, the speaker will beep and the Battery LED is on (Orange).

### 1-5.16 Battery Charger

The A-760 Series battery can be charged during power on and power off. The A-760 Series has three types of battery packs: the first is primary 14 pcs/pack battery, the secondary is 9 pcs/pack battery and the third is 9 pcs/pack battery. The battery charge status is as follows:

1. When the 1st and Bay 1(Bay 2) battery packs are installed simultaneously before charging, the 1st battery pack has priority over the Bay 1 (Bay 2) one in charging order.
2. If you turn off the computer while charging, the charger timer will be reset, so that the CHARGE LED will flash 3 seconds then light statically.
3. The charge time is set to six hours for power on and power off charge.
4. Battery charge time period is as follow:
  - 4.1 Primary batteries in power on, 30W consumption full charge time are about 4.5 hours. The primary batteries full charge voltages are about 21V (MIN).
  - 4.2 The primary batteries in D/D power off, the charge time period are about 2 hours.
  - 4.3 The Bay 1 batteries full charge time period in power on, 30W consumption are about 3 hours. The Bay 1 batteries full charge voltage is about 13.4V (min).
  - 4.4 The primary, Bay 1 and Bay 2 batteries charge time period are about 3 hours in power off.
  - 4.5 The primary battery discharge time period is 1 hour and 36 minutes in power on 30W, but the Bay 1 discharge time period is 1 hour in power on 30W consumption.

### 1-5.17 CHARGE LED Indicator Status

1. When you insert the battery pack into the system and the AC power adapter is already connected, the CHARGE LED (Orange) flashes three seconds or more and then stays on all the time.

2. When you connect the AC power adapter to the system, and the battery pack is already inserted, the CHARGE LED (Orange) flashes three seconds or more and then stays on all the time.
3. When you turn off the system during charging, the charge timer is reset, and the CHARGE LED (Orange) flashes three seconds or more and then stays on all the time.
4. When the battery is fully charged, the CHARGED LED (Orange) goes out.
5. When no battery pack is installed or the AC power adapter is not connected, the CHARGE LED (Orange) is off.

### 1-5.18 Diskette Drive and CD-ROM

(Item 2, Figure 1-6) The notebook has space for a 1.44 MB, 3.5-inch diskette drive and CD-ROM drive. The space can put removable FDD drive or CD-ROM drives.

The diskette drive allows permanent data storage in a compact, transferable media. Data stored on diskettes can be easily passed from one machine to another.

The A-760 Series diskette drive accepts 3.5-inch double-density (720 KB) and high density (1.44 MB) diskettes.



Figure 1-6 Diskette Drive and CD-ROM

1 2 3 4

### 1-5.19 PCMCIA Slot and Diskette Drive and CD-ROM Door

The PCMCIA slot and diskette drive and CD-ROM door (Item 3, Figure 1-6) protects the PCMCIA interfaces and diskette drive from damage in harsh environments.

### 1-5.20 PCMCIA Slots

The notebook has two PCMCIA slots, (Item 1, Figure 1-6). Each supports a Type-II PCMCIA card. Together, they support one Type-III PCMCIA card.

### 1-5.21 External Power Source Port

If the notebook will be in use for a long continuous period, connect an external power source to the notebook here ( Item 8, Figure 1-7).





**Figure 1-7 Rear Side View**

### **1-5.22 Serial Port**

Two serial ports (Item 2, Figure 1-7) are 9-pin D-type connectors for the A-760 Series notebook. They are RS-232C interface set to the COM1 and COM2 addresses.

### **1-5.23 Printer Port**

The printer port (Item 3, Figure 1-7) is a 25-pin D-type interface. Usually this interface supports a parallel printing device.

### **1-5.24 VGA Port**

This 15-pin (Item 1, Figure 1-7) analog port is for connecting in external monitor.

### **1-5.25 IrDA Port**

This infrared port (Item 5, Figure 1-7) complies IrDA, and ASK Standards, which allow you to connect your notebook to an IR device wirelessly.

### **1-5.26 USB Port**

The USB port (Item 6, Figure 1-7) transfers at 1.2 or 1.5 Mbit/sec.

### **1-5.27 Keyboard/Mouse Port**

The Keyboard/Mouse port (Item 7, Figure 1-7) for IBM PS/2 keyboard/Mouse.

### **1-5.28 External Power Adapter**

The A-760 external power adapter converts 100-240V, 50-60 Hz to 22.5VDC, 2.4A, 54 watts for the notebook & expansion unit.

